

**Notice of Allowability**

Application No.

10/669,799

Examiner

Merilyn P. Nguyen

Applicant(s)

KOBAYASHI ET AL.

Art Unit

2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment dated 10/10/2006.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other \_\_\_\_\_

  
ALFORD KINDRED  
PRIMARY EXAMINER

***DETAILED ACTION***

1. In response to the communication dated 10/10/2006 and the Interview dated 12/20/2006, claims 1-9 are active in this application as a result of the cancellation of claims 10-20 and in condition for allowance.

***Examiner's Amendment***

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Richard M. Goldman, Reg. No. 25,585 on 12/20/2006.

The application has been amended as follows:

1 (Currently Amended) A data retrieval system for causing a computer to retrieve data being stored in a database, said retrieval system comprising: a database storing data as a vector digitized based on a keyword; a means for generating a residual vector from said data, said residual vector corresponding to a vector in which an element corresponding to a contribution component in a direction of a basic vector calculated is subtracted from a previously obtained residual vector, the basic vector and the residual vector a newly generated residual vector lie in an orthogonal relationship, to compute and store a covariance matrix and an eigenvector of said

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covariance matrix, and for generating and storing a set of basic vectors from a set of computed eigenvectors; a means for reading out said data and at least one of said eigenvectors from [[a]] the database, and for computing and storing a contribution vector of said eigenvector to said data, and for contracting or enlarging a residual vector [[to store]] by reading out said contribution vector to compute and store a new eigenvector; and a means for selecting a keyword to be used for labeling clusters according to a similarity between said stored basic vector and said data, and a weight on said similarity so as to store the keyword in [[a]] the database; means for classifying data into clusters of documents having the same or similar keywords and depending on a similarity between the stored basic vector and the data; and a means for [[outputting]] outputting cluster data of a cluster to a graphical user interface system for displaying the cluster data.

4 (Currently Amended) A data retrieval method for causing a computer to retrieve data stored in a database, said data retrieval method comprising the steps of:

reading out data from a database storing data as a vector digitized based on a keyword;  
computing and storing a covariance matrix and an eigenvector of said covariance matrix, using said data;

generating and storing a set of basic vectors from a set of said computed eigenvectors;  
reading out said data and at least one eigenvector from the database, and computing and storing a contribution vector of said eigenvector to said data; and computing a residual vector from said data and said eigenvector, and contracting or enlarging a residual vector by reading out said contribution vector to compute and store a new eigenvector; and classifying data

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into clusters of documents having the same or similar keywords and depending on a similarity between the stored basic vector and the data; and [[a means for outputting]] outputting cluster data of a cluster to a graphical user interface system for displaying the cluster data.[]]

7 (Currently Amended) A computer executable program product comprising a computer readable media having computer executable program thereon for implementing a data retrieval method for causing a computer to retrieve data stored in a database, said program comprising the steps of: reading out data from a database storing data as a vector digitized based on a keyword; computing and storing a covariance matrix and an eigenvector of said covariance matrix, using said data; generating and storing a set of basic vectors from a set of said computed eigenvectors; reading out said data and at least one eigenvector from [[a]] the database, and computing and storing a contribution vector of said eigenvector to said data, and computing a residual vector from said data and said eigenvector, and contracting or enlarging a residual vector by reading out said contribution vector to compute and store a new eigenvector in the database; and classifying data into clusters of documents having the same or similar keywords and depending on a similarity between the stored basic vector and the data; and outputting cluster data of a cluster to a graphical user interface system for displaying the cluster data.

13-20. (Canceled)

***Reason for Allowance***

3. The following is an examiner's statement of reason for allowance:

None of the references of record Marchisio (US Patent No. 6,510,406) teaches or suggests the claimed (Claims 1, 4 and 7) invention having, in addition to the other limitations in the claims, the limitations of "computing and storing a contribution vector of said eigenvector to said data...contracting or enlarging a residual vector by reading out said contribution vector to compute and store a new eigenvector..." combined with "classifying data into clusters of documents...depending on a similarity between the stored basic vector and the data".

Dependent claims 2-3, 5-6 and 8-9 are allowable because they depend from claims 1, 4 and 7.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

***Conclusion***

5. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to become abandoned (see M.P.E.P 710.02(b)).

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Aono U.S Patent No. 6,920,450 discloses retrieving, detecting and identifying major and outlier clusters in a very large database.

Minor U.S 2004/0083452 discloses method and system for predicting multi-variable outcomes.

Martens U.S Patent No. 5,983,251 discloses method and apparatus for data analysis.

Martin U.S Patent No. 6,260,038 discloses clustering mixed attribute patterns.

Rie Kubota Ando discloses, "Latent Semantic Space: Iterative Scaling Improves Precision of Inter-document Similarity Measurement", 2000.

Vasileios Hatzivassiloglou, Luis Gravano, and Ankinedu Maganti disclose, "An Investigation of Linguistic Features and Clustering Algorithms for Topical Document Clustering", 2000.

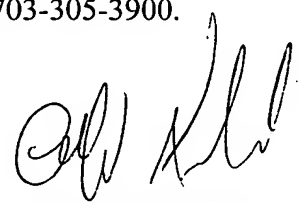
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Merilyn P Nguyen whose telephone number is 571-272-4026. The examiner can normally be reached on M-F: 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 703-746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



MN  
December 20, 2006



ALFORD KINDRED  
PRIMARY EXAMINER